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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,507	01/02/2004	Meng-Song Cheng	MR2723-339	8695
4586	7590	11/09/2005	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			AUGHENBAUGH, WALTER	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 11/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/749,507	CHENG, MENG-SONG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Walter B. Aughenbaugh	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-7 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.

- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Specification***

1. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

3. The abstract of the disclosure is objected to because the abstract is too long and should not refer to purported merits or speculative applications of the invention. Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:
- The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
5. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 2 recites that the particle size of the titanium dioxide material is 5 to 30 micron, but the specification states that the particle size of the titanium dioxide material is 5 to 30 nm (page 5, line 15). Since the titanium dioxide material is characterized as “nanoscale” at page 5, line 16 of the specification, the specification does not provide a description of nanoscale titanium dioxide material having a particle size of 5 to 30 micron.
6. The following is a quotation of the second paragraph of 35 U.S.C. 112:
- The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
7. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In regard to claim 1, that which is intended to be recited by “capable of increasing the absorption efficiency of sunlight and UV light” (lines 6-7 of claim 1) cannot be ascertained. The claim recites that the protective photocatalyst layer is “capable of increasing the absorption efficiency of sunlight and UV light”, but the absorption efficiency of sunlight and UV light of what? Sunlight and UV light itself does not have an absorption efficiency.

Claim 1 provides for the use of a coating composition, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

In regard to claim 5, “based-based” needs correction.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1, 2 and 4-6 are rejected under 35 U.S.C. 102(b) as being anticipated by McCaulley et al.

In regard to claims 1 and 6, McCaulley et al. teach a bottle container provided with a protective film comprising a bottle container (col. 6, lines 15-19) and a protective photocatalyst layer comprising a nanoscale titanium dioxide material (nanocrystalline titanium dioxide) and a metal particle (metal polysilicate) (col. 2, lines 36-41, col. 4, lines 62-67 and col. 6, lines 2-7). McCaulley et al. teach that the bottle may be formed of PET, which is popularly used in containers and packages of foodstuffs, so the bottle of McCaulley et al. is useful for containing beverage, wine or other liquid. The recitation “wherein an alcohol-based compound is incorporated in the solvent of a coating composition used to coat the surface of said bottle container” is a method limitation that has not been given patentable weight since the method of forming the container is not germane to the issue of patentability of the container itself: the alcohol-based compound is not positively recited as a component of the final product. McCaulley et al. teach that the protective photocatalyst layer comprising the nanoscale titanium dioxide material and the metal particle is distributed over the outer surface of the bottle container since McCaulley et al. teach that the protective photocatalyst layer improves interference between light reflected from the top surface of the coated article and the interface between the coating and the article (col. 6, lines 2-7, col. 2, line 66-col. 3, line 3: since light rays are incident upon the coating layer as shown in Fig. 1, the coating layer is necessarily the outer layer of the container).

In regard to claim 2, McCaulley et al. teach that the average particle size of the nanocrystalline titanium dioxide is preferably less than 50nm (col. 4, lines 62-67).

Claims 4 and 5 consist of method limitations that have not been given patentable weight since the method of forming the container is not germane to the issue of patentability of the

container itself. The alcohol-based compound is not positively recited as a component of the final product.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCaulley et al.

McCaulley et al. teach the container as discussed above. McCaulley et al. fail to teach that the container is a glass container. McCaulley et al., however, discloses that it is well known to coat a glass container with a titanium dioxide coating (col. 1, lines 42-46). McCaulley et al. teach that the coating taught by McCaulley et al. results in less interference between light reflected from the top surface of the coating and the interface between the coating and the container (col. 2, lines 45-50). Therefore, one of ordinary skill in the art would have recognized to have coated the glass bottle disclosed by McCaulley et al. with the coating taught by McCaulley et al. in order to decrease the interference between light reflected from the top surface

of the coating and the interface between the coating and the container as compared with the prior art bottle disclosed by McCaulley et al.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have coated the glass bottle disclosed by McCaulley et al. with the coating taught by McCaulley et al. in order to decrease the interference between light reflected from the top surface of the coating and the interface between the coating and the container as compared with the prior art bottle disclosed by McCaulley et al.

12. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over McCaulley et al. in view of Sherman.

McCaulley et al. teach the container as discussed above. McCaulley et al. fail to teach that the photocatalyst layer comprises copper particles. Sherman, however, disclose that copper particles included on the inside of or on the surface of photocatalytic particles of titanium oxides increases the photocatalytic function of the titanium oxides over that of solely photocatalytic particles of titanium oxides (col. 22, lines 35-47). Therefore, one of ordinary skill in the art would have recognized to have included copper particles on the inside of or on the surface of the titanium dioxide nanoparticles taught by McCaulley et al. in order to increase the photocatalytic function of the titanium dioxide nanoparticles as taught by Sherman.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included copper particles on the inside of or on the surface of the titanium dioxide nanoparticles taught by McCaulley et al. in order to increase the photocatalytic function of the titanium dioxide nanoparticles as taught by Sherman.

***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter B. Aughenbaugh whose telephone number is 571-272-1488. While the examiner sets his work schedule under the Increased Flexitime Policy, he can normally be reached on Monday-Friday from 8:45am to 5:15pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon, can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is to 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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